Supporting Information

© Copyright Wiley-VCH Verlag GmbH & Co. KGaA, 69451 Weinheim, 2010

Organoplatinum(II) Complexes with Nucleobase Motifs as Inhibitors of Human Topoisomerase II Catalytic Activity

Ping Wang,[a] Chung-Hang Leung,[a] Dik-Lung Ma,[b] Wei Lu,[a] and Chi-Ming Che*[a]

asia_201000451_sm_misellaneous_information.pdf
Figure S1. UV-vis absorption spectra of 2c (50 μM) in DMSO/TBS (1:19) containing GSH (2 mM) at 0 h and 48 h.
Figure S2. UV-vis absorption and emission (inset) spectra of complexes 1 in H$_2$O at 298 K ($\lambda_{ex} =$ 350 nm, concentration $\sim$5 $\times$ 10$^{-5}$ mol dm$^{-3}$).
**Figure S3.** UV-vis absorption and emission (inset) spectra of complexes 1 in CH$_3$CN solvent at 298 K (\(\lambda_{ex} = 350\) nm, concentration \(~5 \times 10^{-5}\) mol dm$^{-3}$).
Figure S4. UV-vis absorption and emission (inset) spectra of 2a in CH₂Cl₂ and CH₃CN solvents at 298 K (λₑₓ = 350 nm, concentration ~5 × 10⁻⁵ mol dm⁻³).
Figure S5. UV-vis absorption and emission (inset) spectra of 2b in CH$_2$Cl$_2$ at 298 K ($\lambda_{ex} = 350$ nm, concentration $\sim 5 \times 10^{-5}$ mol dm$^{-3}$).
**Figure S6.** UV-vis absorption and emission (inset) spectra of 2c in CH₂Cl₂ solvent at 298 K (λ<sub>ex</sub> = 350 nm, concentration ~5 × 10<sup>-5</sup> mol dm<sup>-3</sup>).
Figure S7. UV-vis absorption spectra of complexes 2 in H₂O at 298 K (concentration ~5 × 10⁻⁵ mol dm⁻³).
**Figure S8.** UV-vis absorption spectra of complexes 2b and 2c in CH$_3$CN at 298 K (concentration ~5 × 10$^{-5}$ mol dm$^{-3}$).
**Figure S9.** UV-vis absorption spectra of complexes 1b-c (40.0 µM) and 2a-b (50.0 µM) in Tris buffer solutions with increasing ratio of [DNA]/[Pt] at 20.0 °C.
Figure S10. Emission spectral traces of 1a-c (50 µM) in Tris buffer solution with increasing ratio of [DNA]/[complex] at 20 °C.
Intensity/a.u.

Wavelength/nm

555nm
**Figure S11.** Gel electrophoresis of 100-bp DNA ladder on a 1.0 % (w/v) agarose gel showing the mobility of DNA (50 µM bp⁻¹) in the presence of ethidium bromide (EB) or Hoechst 33342, complexes 1 and 2.
Figure S12. Relative specific viscosity of calf thymus DNA in the presence of ethidium bromide, Hoechst 33342, complexes 1 and 2 shown as a function of the binding ratio.
Figure S13. Effect of complexes 1a-c on TopoII-mediated DNA relaxation with (a) increasing amount of TopoII enzyme and (b) increasing amount of DNA (pRYG 1µL = 250 ng). (S, supercoiled DNA; R, relaxed DNA; N, nicked DNA)

<table>
<thead>
<tr>
<th></th>
<th>1a + DNA (s)</th>
<th>1b + DNA (s)</th>
<th>1c + DNA (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a) 6 8 10</td>
<td>6 8 10</td>
<td>6 8 10</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table:**

- **(unit)**

**Diagram:**

(Images of gel electrophoresis results showing DNA relaxation under different conditions.)

**Legend:**

- S (Supercoiled DNA)
- R (Relaxed DNA)
- N (Nicked DNA)
**Figure S14.** Schematic model of the binding of ATP to the ATPase domain of human TopoII. The TopoII protein is represented in ribbon model and ATP is represented in a ball and stick model.
**Figure S15.** Effect of complexes 1a-c on TopoI-mediated supercoiled DNA relaxation. (S, supercoiled DNA; R, relaxed DNA; N, nicked DNA)

![Figure S15](image)

**Figure S16.** Effect of complexes 2a-c on TopoI-mediated supercoiled DNA relaxation. (S, supercoiled DNA; R, relaxed DNA; N, nicked DNA)

![Figure S16](image)